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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,070	12/02/2003	Takafumi Asada	8861-485US(P32961-01)	4888

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2005 MARKET STREET, SUITE 2200  
PHILADELPHIA, PA 19103

EXAMINER

KRAUSE, JUSTIN MITCHELL

ART UNIT PAPER NUMBER

3682

DATE MAILED: 09/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/727,070	<b>Applicant(s)</b> ASADA ET AL.	
	<b>Examiner</b> Justin Krause	<b>Art Unit</b> 3682	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 12/2/03.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                            |                                                                                         |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## **DETAILED ACTION**

### ***Specification***

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The disclosure is objected to because of the following informalities: The abstract is too long.

Appropriate correction is required.

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Objections***

In claim 1, remove the parenthesis from around the limitation "wherein A is a value.... less than 1.0."

Claims 2 and 3 are objected to because of the following informalities: the limitation, "and the value of a calculation expression ... is in the range of 1.02 to 1.60" Appears to be drawn to the first dynamic pressure generation grooves but is grouped in the claim with the second dynamic pressure generation grooves. For clarity and readability, the Examiner suggests moving this limitation to the paragraph describing the length relationship of the first dynamic pressure generation grooves (lines 13-16). Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Regarding the limitation "when...", the use of when in the claim renders the claim indefinite because it is unclear if the event claimed has occurred or will ever occur. The examiner suggests removing "when" from the claims and using a phrase such as "where" or "wherein".

7. Claims 2 and 3 recite the limitation "the first length L1", "the second length L2" and "the herringbone-shaped turn-back part". There is insufficient antecedent basis for these limitations in the claim.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gomyo et al (WO02/04825, a suitable English translation is US 2003/0185473 which is referenced herein) in view of Asai et al (US Patent 6,033,118).

Gomyo discloses a hydrodynamic bearing comprising:

a sleeve (13) having a bearing hole at the nearly central portion thereof, a shaft (21) rotatably inserted into said bearing hole of said sleeve, and a nearly disc-shaped flange (23) secured to one end of said shaft, one face of said figure opposing to the end face of said sleeve and the other face thereof opposing to a thrust plate (16) provided to hermetically seal a region including said end face of said sleeve, wherein herringbone-shaped first (13a) and second (13b) dynamic pressure generation grooves are provided on at least one of the inner circumferential face of said sleeve and the outer circumferential face of said shaft so as to be arranged in the direction along said shaft, among said first and second dynamic pressure generation grooves, when the grooves away from said thrust plate are designated as said first dynamic pressure generation grooves and the grooves close thereto are designated as said second dynamic pressure generation grooves,

the first length L1 (Ga1) of the groove portion which is away from said thrust plate in said herringbone-shaped first dynamic pressure generation groove in the direction of said shaft is larger than the second length L2 (Ga2) of the groove portion which is close to said thrust plate in the direction of said shaft, (see fig 2, paragraph 0028)

said herringbone-shaped second dynamic pressure generation groove is made symmetric (paragraph 0027) with respect to a line passing through the herringbone-shaped turn-back part,

herringbone-shaped third dynamic pressure generation grooves are provided on at least one of the opposed faces of said flange and said thrust plate (SG, fig 4),

one of said sleeve and said shaft is secured to a base and the other is secured to a rotatable hub rotor.

Regarding the limitation that the value of a calculation expression,  $(L1+L2)/(2 \times L2)$  represented by said first length L1 and said second length L2, is in the range of 1.02 to 1.60, while not explicitly stated, Gomyo requires that the first length be longer than the second length, making the device capable of meeting this limitation and it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the range of the groove lengths since the relationship found through routine experimentation and tailored to the intended use of the device. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955)

Gomyo discloses oil in the first, second and third dynamic pressure generation grooves but does not disclose a viscosity.

Asai teaches an oil viscosity for a hydrodynamic bearing that is between 20 and 200 cSt at 40 deg. C (Col 4, line 31) to reduce dynamic torque at low temperatures (Col 4, line 8) and still provide a suitable load capacity at high temperature (Col 4, line 48) .

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use an oil with a viscosity above 4 cSt at 40 deg. C, the motivation would have been to reduce dynamic torque at low temperatures while still being capable of providing a suitable load capacity at high temperatures.

***Allowable Subject Matter***

10. Claims 1 and 3-6 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

***Conclusion***


11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin Krause whose telephone number is 571-272-3012. The examiner can normally be reached on Monday - Friday, 7:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on 571-272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JKK  
9/14/06

  
RICHARD RIDLEY  
SUPERVISORY PATENT EXAMINER